CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
Sacramento, California 95814

Website: www.energy.ca.gov

Notice of Availability

Final Committee Report
California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development

The California Energy Commission's Renewables Committee and staff, working with the California Department of Fish and Game (CDFG), have developed the Final Committee *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development* (*Guidelines*). The Final Committee *Guidelines* document will be available from the Energy Commission's website at:

www.energy.ca.gov/renewables/06-OII-1/documents

A printed copy is available by contacting the Energy Commission. Please send your request to:

Nita McGlothin
California Energy Commission
Re: *California Guidelines* (Publication No. CEC-700-2007-008-CTF)
Environmental Office, MS-40
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Energy Commission and CDFG staff released the draft *Guidelines* on December 22, 2006 and released the revised draft *Guidelines* on April 5, 2007. The Energy Commission has received comment letters on the *Guidelines* from wind energy development companies, counties, conservation groups and other non-governmental organizations, scientists, and private citizens. Additional comments on the revised draft *Guidelines* were received at a Renewables Committee workshop held on April 16, 2007 and at a hearing held on August 13, 2007 at the Energy Commission. The Renewables Committee considered comments submitted on the previous versions of the draft *Guidelines* in developing the Final Committee *Guidelines*. Attachment A, the Decision Document, summarizes the major changes between the version of the document released on July 17, 2007 and the version now being released, describes how the comments were addressed, and provides a brief rationale as to why decisions were made to accept or reject suggestions for change.

The Energy Commission will consider the *Guidelines* for adoption at its Business Meeting scheduled for September 26, 2007. A public notice with additional details will be distributed at least 10 days prior to the Business Meeting. Interested parties can find summaries of past workshops and other information at [www.energy.ca.gov/renewables/06-OII-1/].

The Energy Commission's Public Adviser's Office is available to assist the public in participating in the review process. For general information on how to participate, please contact the Public Adviser's Office at (916) 654-4489 or (800) 822-6228, or by e-mail at [pao@energy.state.ca.us]. News media should direct inquiries to Claudia Chandler, Assistant Executive Director, at (916) 654-4989, or by e-mail at [mediaoffice@energy.state.ca.us]. For questions on technical subject matter, please contact Rick York, Senior Biologist, [ryork@energy.state.ca.us].

Notice Date: September 14, 2007

Mail Lists: Wind Energy and Avian Mortality Impact Monitoring e-mail list server

Attachment A

Decision Document for the *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*

Publication No. CEC-700-2007-008-CTF / Docket No. 06-OII-1

INTRODUCTION

Development of the *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development* (*Guidelines*) has been a public, inclusive process since the California Energy Commission (Energy Commission) and the California Department of Fish and Game (CDFG) launched this effort on May 24, 2006. Since that time the Energy Commission and CDFG have hosted eight public workshops or hearings in Sacramento, Bakersfield, Riverside, and Livermore, and have solicited and received public comments on three draft versions of the *Guidelines*. More than 80 interested parties, including representatives from wind industry, resource agencies, environmental groups and other non-governmental organizations, utilities, county planning departments and elected officials, universities and research institutes participated in these public events and/or submitted written comments on the *Guidelines*. Attachment A summarizes the history and milestones of public involvement in the process, and Attachment B lists the participants. The Energy Commission Web site, <www.energy.ca.gov/renewables/06-OII-1> provides summaries of workshops, transcripts of hearings, docketed comment letters, and all public review drafts of the *Guidelines*.

A comparison of the first draft of the *Guidelines* with the final version reveals how extensively the contents and organization of this document have changed in response to the many comments and suggestions for improvements submitted by interested parties. However, not all suggested revisions have been incorporated into the Final Committee *Guidelines*. The purpose of this Decision Document is to summarize the comments on the July 2007 Committee Draft of the *Guidelines,* describe how the comments were addressed in the Final Committee *Guidelines*, and provide a brief rationale as to why decisions were made to accept or reject suggestions for change.

Table 1 is a list of the comment letters received on the July 2007 Committee Draft *Guidelines*. Table 2 provides a summary of the comments in the letters and a response to those comments.

Table 1. Comment Letters Received on July 2007 Committee Draft of *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*

Organization	Author
Cabazon Wind Energy, LLC	None given
California Wind Energy Association (CalWEA)	Nancy Rader
Center for Energy Efficiency and Renewable Technologies (CEERT)	Paul Vercruyssen
Clipper Wind Energy	Stu Webster
Cimino, Richard (private citizen)	Richard Cimino
Defenders of Wildlife +	Kim Delfino
EnXCo Development Corporation	Greg Blue
FPL Energy Project Management, Inc. *	Kenneth Stein
Horizon Wind Energy	Brenda LeMay
Invenergy Wind North America	Karyn D. Coppinger
Kern County Planning Department	Lorelei Oviatt
Kern Wind Energy Association (KWEA)	Linda Parker
National Audubon Society	Julia Levin
Oak Creek Energy	Edward Duggan
PPM Energy	Andy Linehan
RES America Developments, Inc.	Nicole Hughs
San Gorgonio Farms, Inc.	None given
Santa Barbara County Planning and Development	John Day
Weller, Ted (bat expert)	Ted Weller
Whitewater Wind Energy, Inc.	None given
Wintec Energy Ltd & Desert Wind Energy Association	Frederick Noble

+ Incorporates by reference Audubon's comment letter

* Incorporates by reference CEERT letter

Table 2. Response to Comments and Rationale for Decisions

	ADOPTION OF *GUIDELINES,* FUTURE REVISIONS
1	**Comment**: Cabazon Wind, CalWEA, Invenergy, KWEA, Oak Creek Energy, San Gorgonio Farms, & Whitewater Energy and others suggested delaying the proposed adoption of the *Guidelines* because they believe the Committee Draft requires fundamental and significant changes. FPL and others requested an explanation of what changes will or will not be made in response to comments before the final report is adopted. **Response**: We have not postponed consideration and possible adoption of the *Guidelines,* scheduled for the Energy Commission's September 26, 2007 Business Meeting, because we believe that eight public workshops/hearings and three rounds of public comment on successive drafts of the *Guidelines* have provided ample opportunities for all parties to express their concerns, and for the Energy Commission and CDFG to respond to those concerns. The remaining differences of opinion on certain elements of the *Guidelines* have been thoroughly discussed at the workshops and addressed where possible in revisions. We do not believe that another public workshop and set of written comments on the fourth revised draft will achieve further resolution on the remaining points of disagreement.
2	**Comment**: Audubon and Sierra Club requested that the *Guidelines* provide a date by which the Commission and CDFG will review and revise as appropriate based on new data, research, and experience. They recommend no sooner than three years and no longer than five years from the date that the Energy Commission adopts the *Guidelines*. Defenders of Wildlife also commented that it is appropriate for the *Guidelines* to note that they will change recommendations as new information is gathered **Response**: We agree that the *Guidelines* may need revising as new information becomes available, and in the Introduction (page 4) state: "*The entire document will be reviewed and revised, if necessary, approximately every five years*."
	RETROACTIVE APPLICATION OR "GRANDFATHERING" OF *GUIDELINES*
3	**Comment**: CalWEA, enXco, FPL, RES, and others have requested that the *Guidelines* explicitly state that they are not meant to apply to projects that have already begun detailed scientific pre-construction studies. They note that current projects are already being delayed as county siting agencies wait for final *Guidelines.* The commenters

	request that projects which have already conducted significant avian studies, or which have undertaken post-construction monitoring and mitigation plans, be exempt from changes resulting from adoption of the *Guidelines*. Audubon requested that the *Guidelines* refrain from adding a disclaimer about "retroactive application" of *Guidelines* because this document is meant to clarify what is expected to comply with existing laws, which have been law for decades. Any project currently in development should already be complying with these laws. Audubon also notes that the *Guidelines* states clearly and repeatedly that they are voluntary and meant to provide guidance only, so retroactive "requirements" that result from the *Guidelines* do not make sense. **Response**: We have made no explicit suggestions in the *Guidelines* as to how lead agencies should treat projects that have already started the permitting process. We believe that decisions about whether or how to apply the *Guidelines* to projects that have already begun studies or the permitting process are best left to the local permitting agency.
	REPOWERING AND STREAMLINING
4	**Comment**: CalWEA, CEERT, enXco, Oak Creek Energy comment that the *Guidelines* should encourage local agencies to streamline permitting for repowers, as CEQA enables streamlining for repowered fossil fuel plants and some other projects that are replacement or reconstruction of existing facilities (CEQA Guidelines section 15302). CEERT, CalWEA, EnXco, Oak Creek Energy, and others noted that available evidence suggests that repowering will reduce impacts to wildlife. Oak Creek Energy and others requested deletion of the sentence "*Repowering requires pre-permitting studies using the same methods as those described above for new species.*" (page 58, lines 2057=2068 of Committee Draft), and CEERT provided some suggested language to revise the discussion of repowering in Chapter 3. **Response**: We have deleted the sentence as requested and revised the discussion about repowering in Chapter 3 in accordance with the suggestions from CEERT and others to better reflect the fact that many repowering projects will require less study effort than new projects if information is already available on the potential impacts of the repowering. However, we believe that decisions about "streamlining" are best left to the discretion of the lead agency, and have not indicated whether repowers should be considered categorically exempt or eligible for streamlining. Research about the impacts of repowering is still in progress, and the few studies available on the effects of repowering on wildlife indicate reduced impacts for some species, but in some cases greater impacts for other species. The information from repowering studies is not yet sufficiently clear-cut or compelling for the *Guidelines* to state with confidence that

	repowering projects always result in reduced impacts to wildlife.
	PRESCRIPTIVENESS, FLEXIBILTY
5	**Comment**: CalWEA, Oak Creek Energy, KWEA, RES, and others requested modification of the prescriptive nature of *Draft Committee Guidelines*, commenting that they are inflexible and do not allow for creative, site-specific mitigation and variance in study protocol. They suggest that the *Guidelines* should instead recognize the various project circumstances that may exist and various appropriate methods that could be used with equal effectiveness. **Response**: The *Guidelines* are specific on many of the recommended study methods because we believe delays and conflicts will be reduced if all parties have a common understanding of what constitutes a reasonable level of effort to gather sufficient information to avoid and minimize potential impacts to birds and bats. In addition, consistency in survey techniques will promote comparison capability at wind energy projects throughout California by using similar methods and metrics. The suggested study protocols in the *Guidelines* are sufficiently flexible to accommodate the unique features of each site, and throughout the document we have included explicit suggestions to consider existing data and local conditions in developing study design for pre-permitting and operations studies. For example: • *For all projects, base the duration and focus of pre-permitting studies on the availability of site-specific, baseline data needed to answer impact questions; the species potentially affected; and the magnitude of the anticipated effect*. (page 8) • *Base the duration and focus of operations monitoring studies on the availability of existing, site-specific data; the species potentially affected; and the magnitude of the anticipated effect (page 70).* • *The spacing of sample sites can vary, as needed, depending on topography and on which species or species groups are the targets of the surveys (page 43).* • *The number of selected observation points depends on the number and spacing of potential turbines or turbine strings, the ability to observe several potential turbine locations from a single point (Morrison, 1998), whether large or small birds are the study focus, and the heterogeneity of terrain and habitats (page 43).* • *The duration of operations monitoring should be sufficient to determine whether pre-permitting estimates of impacts to birds or bats were reasonably accurate and to determine whether turbines are causing unanticipated fatalities that*

	require impact avoidance or mitigation actions (page 70). • *The bird use count methods* [for operations monitoring] *should be consistent with those used during the pre-permitting studies, but can be tailored to specifically address issues that may have arisen during those studies (page 71).*
6	**Comment**: CalWEA and RES requested that the *Guidelines* better recognize that various existing sources of information and various scientifically valid techniques can provide the needed information rather than field studies. **Response**: The *Guidelines* make frequent references to how existing information forms a crucial part of the pre-permitting assessment, and how for Category 1 projects, such information may be able to reduce most of the field studies needed at a project site.
	ACCOMMODATION OF REGIONAL VARIATION
7	**Comment**: Wintec Energy commented that the *Committee Draft Guidelines* make no distinction as to various regions of the state and that in Riverside County the wind turbines are installed in the desert where there is no game for raptors to hunt and no evidence of birds or bats killed by wind turbines. Cabazon Wind, San Gorgonio Farms, and Whitewater also requested that Riverside County be exempt from these *Guidelines* due to lack of avian and bat mortalities as proven by multiple studies over two decades. **Response**: The *Guidelines* are intended to provide recommendations that can be applied statewide, and therefore have avoided making recommendations specific to particular regions or counties in California. We encourage lead agencies to incorporate regional information and studies in their application of the *Guidelines*. The *Guidelines* specifically indicate that if defensible research findings and nearby studies are available on wind-wildlife interactions for a particular project area, then the project falls into Category 1 and reduced study effort is appropriate.
8	**Comments**: CalWEA, Oak Creek Energy, KWEA, RES, and others suggest that CEQA lead agencies should not require project proponents to follow the recommended courses of study, but rather should use their own discretion in applying the *Guidelines* in view of local circumstances, existing information, and their own judgment and experience. **Response**: We agree that lead agencies will need to use their own discretion in applying the *Guidelines* because biological conditions vary greatly from region to region and availability of baseline data and relevant studies will differ from site to site. We have emphasized this throughout the *Guidelines*, and the revised draft includes additional language emphasizing the importance of lead agencies incorporating local information and concerns: "*Local governments are encouraged to integrate the*

	recommended study methods described in the Guidelines with biological resource information and research unique to their region." (Page E-1).
9	**Comment**: The Kern County Planning Department noted that the *Guidelines* provide a needed science-based reference for Kern County as they review and consider projects, and suggested adding the following language: "*Local governments are encouraged to tailor the guidelines, based on biological information and research unique to their region, for their local area. These modified guidelines could then be adopted, through a public review process, by local agencies for use in siting and evaluating wind energy projects*. " **Response**: As described in the preceding comment, we have added some of the language from this suggestion to the Executive Summary, but have not explicitly recommended that local agencies adopt these *Guidelines*. Those decisions are best left to the discretion of the local agencies.
	TURBINE COLLISIONS DO NOT CAUSE BIRD OR BAT MORTALITY
10	**Comment**: Wintec Energy comments that studies conducted at their turbines in Altamont Pass over the past year have found only two dead nestlings, one mature bird of undeterminable species, and one dismembered hawk. The dismemberment of the hawk indicates the wind turbine was not the source of the death, because windmill blades are not sharp, they do not sever wings, they do not dismember, but rather utility power lines or other predators cause these injuries. **Response**: Collisions of birds and bats with wind turbines have been well-documented (see the National Research Council's 2007 report, www.nationalacademies.org/); the purpose of the *Guidelines* was not to provide evidence of wind turbine collisions with wildlife, but to offer recommendations on how to avoid and minimize such impacts.
	COST TO WIND INDUSTRY OF IMPLEMENTING *GUIDELINES*
11	**Comment**: CalWEA, Clipper, enXco, Wintec Energy, Oak Creek Energy, and others noted that the *Guidelines* prescribe specific, long-term, unnecessary studies that would create new regulatory hurdles, discourage development of wind energy in the state, create uncertainty in forecasting environmental costs, and incur huge costs without contributing much knowledge about risk or reducing impacts. CalWEA states that implementing the recommendations in the *Guidelines* would cost at least $2.5 million for a 7,000-acre (11 square miles) project area without necessarily reducing impacts. Oak Creek Energy estimates the cost of one year of bat acoustical monitoring studies on a 13-square mile project site (500 MW) at $750,000.00, and FPL estimates bat acoustic

	monitoring would cost $600,000/year for a typical 200 MW project. **Response**: We do not believe the *Guidelines* pose any new regulatory hurdles because they are not regulations, only recommendations to help comply with existing state and federal laws. We believe that certainty in forecasting schedules and costs is enhanced by having specific, consistent recommendations for how to conduct wildlife studies at proposed wind energy project sites. We have revised the acoustic monitoring and operation monitoring bird and bat use surveys so that study effort will be reduced, with an associated decrease in costs. We estimate that costs will be lower than those described by CalWEA, Oak Creek, and FPL. In our estimates we assume a 13-square mile project with 100 turbines. In our estimates we use eight observation points for the bird use counts and assume eight acoustic monitoring devices placed on four meteorological towers. With these assumptions, we estimate that one year of bird use counts conducted once a week for 30 minutes for a full year would cost approximately $100,000. We estimate the cost of acoustic monitoring for bats for one year to be approximately $100,000, including purchase of the acoustic detectors, analysis, and report. Subsequent projects would cost less because equipment would already have been purchased. We also believe application of the *Guidelines* may reduce conflict and delay in local permitting processes, thereby accelerating the development of California's wind resources.
	BALANCING AVIAN IMPACTS WITH BENEFITS OF WIND ENERGY
12	**Comment**: EnXco comments that no consideration was given to balancing between avian impacts and promoting wind development to minimize impacts from global warming. **Response**: No such discussion has been included because it is outside of the scope of the *Guidelines*, which is to provide recommendations on study methods that would help reduce impacts to birds and bats from wind energy development.
	RECOMMENDED STUDY METHODS CONSTITUTE RESEARCH
13	**Comment**: CalWEA, FPL, KWEA, and others are opposed to requirements such as bird use counts and bat acoustical monitoring because they consider such uniform, across-the-board studies as tantamount to state-mandated research projects. **Response**: The recommended methods described in the *Guidelines* will provide project specific information that is needed by decision-makers at permitting agencies. The

	primary goal of the *Guidelines* is to offer the tools needed to conduct site-specific, scientifically sound biological evaluations, but we agree that consistent use of these methods could also have research value. Consistent study methods will produce comparable data among pre-permitting and operation surveys within California and allow for analyses of trends and patterns of impacts at multiple sites. This will ultimately improve the ability to estimate and resolve impacts locally and regionally. Having such data available for future researchers to analyze does not constitute a state-mandated research project.
	VOLUNTARY NATURE OF *GUIDELINES*
14	**Comment**: CalWEA, KWEA, and Oak Creek Energy expressed concerns that although the *Guidelines* have been deemed "voluntary," they establish a rigid state-sanctioned approach which lead agencies will be forced to follow; if they wish to deviate from the *Guidelines*, they will be forced to expend significant time and resources to justify the different approach. **Response:** We believe that with or without the *Guidelines*, lead agencies and wind energy developers would be obliged to demonstrate that their proposed study methods are adequate to satisfy CEQA and state and federal wildlife laws. As described above in Comments #5, the *Guidelines* are sufficiently flexible to accommodate the unique features of each project site, and to consider existing data and local conditions in developing study design for pre-permitting and operations studies
15	**Comment**: Oak Creek Energy suggested adding a sentence in the Introduction (at line 153-162) emphasizing the purpose is to provide a voluntary set of *Guidelines*. RES suggested that early in the Executive Summary language be added indicating that methods suggested in this document may need to be adjusted to accommodate unique, site-specific conditions. **Response**: Language similar to that suggested by Oak Creek Energy and RES has been added in the Executive Summary and on page 1.
16	**Comment**: Oak Creek Energy and enXco suggest that the title of the document should be changed to: "*Voluntary California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development."* **Response**: We believe that adding "Voluntary" to the title is unnecessary because the *Guidelines* explicitly and clearly state that fact throughout the document.

	RECOMMENDATIONS IN *GUIDELINES* EXCEED INDUSTRY STANDARDS
17	**Comment**: Invenergy, San Gorgonio Farms, Cabazon Wind, and Whitewater Energy state that the Committee Draft recommends practices that go well beyond current industry practices and what is required under CEQA to identify and mitigate all significant environmental impacts caused by a project development. **Response**: The *Guidelines* recommend specific protocols to obtain standardized baseline information to evaluate potential impacts to birds and bats pursuant to CEQA. The level of effort in the recommended study protocols is in keeping with what many responsible wind developers are already doing on their projects, and we believe they are consistent with industry practices. Recommendations for mitigation of impacts identify known actions that would benefit bird and bat populations and offset impacts to affected species. Project specific mitigations based on the recommended measures can be developed by CEQA lead agencies if mitigation is required for project impacts.
18	**Comment**: CalWEA comments that the wind industry is being singled out to conduct general research, excessive impact studies and mitigation, while other industries with greater environmental impacts (fossil fuel, housing, timber) are not. **Response**: The *Guidelines* recommend specific protocols to obtain standardized baseline information to evaluate potential impacts to birds and bats pursuant to CEQA. All industries in California (fossil fuel, timber, and housing) are subject to the same state and federal wildlife laws and to applicable CEQA requirements when seeking project approvals.
	CREDIBILITY OF REFERENCES
19	**Comment**: CEERT noted that the California Bat Working Group's *Guidelines for Assessing and Minimizing Impacts to Bats and Wind Energy Development Sites in California* was cited as a reference in the *Guidelines*, but this document was not peer reviewed and has no author attribution. Until the document's authors and the working group membership can be verified, CEERT questions use of this document as a cited resource. **Response**: The California Bat Working Group (CBWG) is one of 13 working groups from the western United States and Canadian provinces that comprise the Western Bat Working Group (WBWG) (<http://www.wbwg.org>), which in turn is a partner in the Coalition of North American Bat Working Groups. This coalition consists of agencies, organizations, and individuals interested in bat research, management, and

	conservation. The authors of the CBWG's *Guidelines for Assessing and Minimizing Impacts to Bats and Wind Energy Development Sites in California* (CBWG Guidelines) are all highly respected, recognized experts on California bats, and two of the authors, Ms. Bronwyn Hogan and Dr. Bill Rainey, are members of the Science Advisory Committee that the Energy Commission and CDFG assembled to advise this *Guidelines* effort. The contributors to the CBWG Guidelines are: Betsy Bolster, Staff Environmental Scientist, Wildlife Branch, CDFG; CBWG chair and co-rep to WBWG Patricia Brown, Ph.D. Research Associate, Dept Physiological Sciences, UCLA; Bronwyn Hogan, Environmental Scientist, Water Branch, CDFG; Heather Johnson, Consulting Biologist, Sacramento, CA; CBWG co-rep to WBWG; William Rainey, Ph.D., Associate Specialist, Dept Integrative Biology, UC Berkeley; Elizabeth D. Pierson, Ph.D., Bat researcher and consulting biologist, Berkeley, CA; Joseph M. Szewczak, Ph.D., Associate Professor, Dept of Biological Sciences, Humboldt State University; Ted Weller, Wildlife Biologist, Pacific Southwest Research Station, Redwood Sciences Lab, USFS, Arcata, CA; previous WBWG officer. We consider the CBWG Guidelines an appropriate information source for these *Guidelines*. Furthermore, they provide a useful reference for readers looking for a recent, California-specific discussion of bats in relation to wind energy.
20	**Comment**: CalWEA and Oak Creek Energy requested deletion of all references to the Smallwood and Thelander (2004) study because the Energy Commission's independent review (Energy Commission publication # CEC-500-2006-114, posted December 15, 2006, <www.energy.ca.gov/pier/final_project_reports/500-04-052.html>) indicated major flaws that compromise the conclusions of the report. CalWEA and Oak Creek expressed concerns that by citing this study without caveat, the Energy Commission is promoting the use of a study that its own reviewers have established as not credible. **Response**: The independent, peer review study cited by CalWEA did not conclude that Smallwood and Thelander (2004) should not be cited, or that all of the information in the report is without value, only that certain conclusions in the report were not adequately supported by statistical tests. This reference is still widely used, as evidenced by the number of times it is cited in the National Research Council (2007) report (Environmental Impacts of Wind Energy Projects) because it provides one of the largest and most comprehensive data sets available on wind-wildlife interactions. The Smallwood and Thelander study is cited in the *Guidelines* to provide background information on a number of points (for example, noting that researchers should not assume that all carcasses in the search area are the result of turbine strikes, page 73). We are unaware of any studies or peer reviews that have challenged the data or analysis for any of the specific Smallwood and Thelander (2004) citations used in the *Guidelines*.
21	**Comment**: Wintec Energy commented that Smallwood and Thelander 2004 study is the foundation for the *Guidelines*, but much of the evidence in that study was altered and forged. The Energy Commission independent review of the Smallwood and Thelander

	study found it "should not be considered as the basis for developing siting requirements for future wind energy projects" yet the *Guidelines* cite the Smallwood study five times. **Response**: The Smallwood and Thelander study is only one of over 100 references cited in the *Guidelines* and does not provide the foundation for the recommended study methods, nor did the independent, peer review analysis find any evidence of alterations or forgeries. As discussed above, we are not aware of any studies that would challenge the data or analysis for any of the specific Smallwood and Thelander citations used in the *Guidelines*.
	CERTFICATION OF COMPLIANCE WITH *GUIDELINES*
22	**Comment**: Sierra Club suggested including a provision in the *Guidelines* that would publicly certify compliance for companies that followed the recommendations (for example, a checklist that the permitting authority would complete. **Response**: The idea of certification was discussed at several workshops, and many agree that the idea of some kind of "green certification" has merit and is worth exploring. However, the development of this concept is beyond the scope of these *Guidelines* and will need to be addressed in another forum.
	STEP-BY-STEP GUIDE
23	**Comment**: FPL suggested revising line 331 " …*projects potentially falling into Category 1 would include infill development and those near <u>low impact</u> wind facilities (emphasis added)*" This should be changed as follows to reflect the language at line 1282 addressing the same issue: " . . . and those near wind facilities where there is little uncertainty as to the level of impact." This change makes the language consistent with that appearing in Chapter 3. **Response**: The suggested change has been made.

	CHAPTER 1 - PRELIMINARY SITE SCREENING
24	**Comment**: RES requested deletion of line 829, page 23, that: "*a site visit is essential*" for a pre-permitting assessment. This information can be obtained from literature, photos, GIS data, and topographic maps; field visits to sites referenced in studies are not necessary. **Response:** We have retained the recommendation for a site visit because literature searches, photographs, and data base searches cannot substitute for the first-hand information that a knowledgeable biologist would gain by visiting the site. The site visit allows the biologist to verify the information from these sources and to make a preliminary assessment of what biological resource issues might merit further study.
	CHAPTER 2 - CEQA/STATE AND FEDERAL WILDLIFE LAWS/PERMITTING
25	**Comment**: CEERT, FPL and others objected to the language on page 29, line 1043-1044 in the Committee Draft stating that permits may include conditions to "*fully mitigate*" impacts. They comment that no wind project should be required to mitigate or compensate for impacts that are less than significant and that strict liability "take" laws do not necessarily require that any and all take be mitigated. They note that mitigation measures in addition to those required by CEQA may be necessary to satisfy the wildlife agencies sufficient to exercise prosecutorial discretion, but would not be correct with regard to bats, which are protected only against significant adverse impacts under CEQA unless they are endangered. At lines 1043-1044 they recommended deleting the word "fully" and the word "bats". **Response**: We have deleted the reference to bats, but have retained "fully" because any project that needs to obtain a California Endangered Species Act permit would be required to "fully mitigate" the impacts of the project. CEQA and the other laws have differing standards that are outlined in Chapter 2 of the *Guidelines*. It is correct that strict liability take laws do not explicitly require minimization or impact mitigation, but they do not explicitly discourage or prevent it; they simply prohibit all take for identified species. Every facility that kills bird species protected by these strict liability laws is in violation of the laws. The *Guidelines* do not require that lead agencies impose mitigation for violation of these laws, but rather suggest a process by which all project impacts are identified, evaluated, and mitigated (if necessary) to satisfy the requirements of multiple laws. The overall intent of these *Guidelines* is to reduce impacts to birds and bats from wind energy projects, an approach that will expedite

	wind energy facility siting decisions while ensuring environmental protection.
26	**Comment**: FPL requested deletion of line 306, 1030 "*Following CEQA Guidelines alone may not highlight all the species and issues that need evaluation*." CEQA requires evaluation of all environmental impacts, significant or not, and cannot think of any case where an evaluation of a wind project's impacts to birds and bats would not be sufficient. **Response**: This sentence has been retained because it provides a reminder that other state and federal laws in addition to CEQA need to be considered in analyzing the impacts of wind energy facilities to birds and bats.
27	**Comment**: RES requested deletion of line 975, page 28 "*Compliance with these Guidelines…*" because it implies that compliance with the *Guidelines* is required to avoid prosecution. RES suggests that the term "compliance" should be reserved for discussing regulations, not voluntary guidelines, and all inferences to enforcement of compliance or risk of non-compliance should be removed from the document. **Response**: We have replaced "*compliance*" with "*implementing the recommendations in the Guidelines*…" on this line, and have retained discussions of compliance if they relate to federal and state wildlife laws and CEQA.
28	**Comment**: Audubon requested a correction in the section on Fully Protected Species Provisions, which do not allow take of species listed as Fully Protected except for scientific and recovery purposes. Audubon comments that the *Guidelines* are generally accurate about their characterization of the Fully Protect Species provisions, but in this section it incorrectly states that impacts on these species should be "minimized," (page 33, line 1182), which is not what the law requires. **Response**: The section on fully protected species has not changed. While it is correct that strict liability take laws do not explicitly require minimization or impact mitigation, they do not explicitly discourage or prevent it; they simply prohibit all take for identified species. It is CDFG's intent to recommend proactive measures to reduce and offset impacts to bird species affected by wind energy projects regardless of their legal status.
	GUIDELINES SHOULD ONLY FOCUS ON IMPACTS CONSIDERED SIGNIFICANT UNDER CEQA
29	**Comment**: CalWEA, FPL, KWEA, Oak Creek Energy, and others recommended the *Guidelines* use a new approach and be revised to focus on information needed to determine significant CEQA impacts specific to each proposed project site. FPL requested insertion of the word "*significant*" before "*impacts*" at lines 528, 975, 2400, and CalWEA requested that "*significant*" should be inserted before the word "*impact*" throughout the document. CalWEA also recommended removing language that implied non-significant impacts must be eliminated, minimized, or mitigated. Oak Creek Energy also commented that CEQA only requires mitigation for significant impacts; therefore

	the wind industry is being held to a higher standard than other industries. **Response**: The goal of the *Guidelines* is to help lead agencies and wind energy developers conduct studies that will address the requirements of CEQA and state and federal wildlife laws. The *Guidelines* recommend specific protocols to obtain standardized baseline information to evaluate potential impacts to birds and bats pursuant to CEQA. Evaluations and judgments about the level of impacts required for mitigation are the domain of the local lead agency. The *Guidelines* provide science-based tools that provide this information to lead agencies. We do not agree that the wind industry is being held to a higher standard because all industries are expected to obey state and federal wildlife laws.
30	**Comment**: CalWEA proposed a decision-tree approach oriented around collecting enough information to make a determination of significant impact under CEQA, but staff never engaged in discussion about this proposal. **Response**: Staff gave CalWEA's suggestion serious consideration and made concerted efforts to develop a decision tree process that would allow lead agencies to decide on levels of study efforts early in the permitting process. This attempt to create a decision tree was abandoned prior to release of the first draft because staff found that each decision point resulted in too prescriptive an action that did not take into account the unique features of each project site. We found that the categorization of project sites, suggested by CalWEA and CEERT provided a more flexible tool for addressing project-by-project variation because it allows the lead agency to make decisions about study effort needed based on existing information and local circumstances without having to make a decision early in the permitting process about the level and focus of study.
31	**Comment**: CEERT commented that the *Guidelines* often mixes up that which may be required to ascertain, avoid, or mitigate significant impacts under CEQA with actions that may be useful to show good faith under federal and state wildlife laws. On page 28, lines 975 – 979, like those at lines 310-315, are clear statements of the intended use of the *Guidelines* other than for CEQA purposes. The level of effort or mitigation under other wildlife laws should not be couched to require net zero fatality. **Response**: The *Guidelines* suggest a process by which all project impacts are identified, evaluated, and mitigated (if necessary) to satisfy the requirements of multiple laws, and the overall intent of these *Guidelines* to reduce impacts to birds and bats from wind energy projects. We believe this approach will expedite wind energy facility siting decisions while ensuring environmental protections, a stated goal of the *Guidelines* from the onset of their development. The study methods recommended in the *Guidelines* are intended to develop information that is useful not just for CEQA analysis but also to address other state and federal laws. The review and permitting process will be easier for both lead and wildlife agencies when pre-permitting studies are designed in a way that considers not just potential CEQA-significant impacts, but all the federal and state wildlife laws
32	**Comment**: CEERT recommended deleting lines 1009-1011 on page 29 because inadequate data acquisition might result in permit denial, but CEQA does not allow

	"default assumptions" of impacts based on inadequate data. The sentence is a misstatement of law. **Response**: The language in the *Guidelines* has been revised to avoid misinterpretation.
33	**Comment**: CalWEA and Oak Creek Energy cite *Kerncrest Audubon Society, et al. v. City of Los Angeles Department of Water and Power, et al.* (Fifth District Court of Appeal, No. F050809) as affirmation that CEQA only requires studies to make a reasoned and reasonable conclusion about the adverse effects of a project, and therefore, many of the recommendations in the draft *Guidelines* are excessive and unnecessary. **Response**: The study recommendations and protocols presented in the *Guidelines* are intended to develop the necessary baseline information to evaluate potential impacts to birds and bats from proposed wind energy projects; and this information is intended to inform decision-makers and the public through the CEQA process. The *Guidelines* also provide advice throughout on how to tailor the recommended assessments to project-specific or site-specific circumstances. As a legal matter, this appellate court decision is unpublished and is prohibited from being cited or relied on pursuant to California Rules of Court, rule 8.1115(a). In addition, the holding was specific to the facts of that particular case and does not necessarily have any implication for the recommendations for study methods discussed in the *Guidelines*.
	ROLE OF *GUIDELINES,* LEAD AGENCIES IN DETERMING TYPE OF ENVIRONMENTAL DOCUMENT
34	**Comment**: CalWEA suggests that the *Guidelines* should encourage lead agencies to use negative declarations, mitigated negative declarations, and categorical exemptions where pre-permitting assessment shows that avian and bat impacts are not significant. CalWEA expressed concern that the *Guidelines* will pressure lead agencies to require full EIRs on every project, and provided the following language to clarify the conditions under which CEQA Guidelines specify preparation of various environmental documents: "*These Guidelines are intended to allow lead agencies to make informed permitting decisions. They are not intended to suggest that lead agencies should require the preparation of an Environmental Impact Report (EIR) for all wind projects. The appropriate level of CEQA review should be made on a project-by-project basis by the local lead agency. For example, where pre-permitting assessment has demonstrated that avian and bat impacts are less than significant or can be reduced to a less than significant level through mitigation, these Guidelines encourage lead agencies to consider use of negative declarations, mitigated negative declarations, or categorical*

	exemptions, where appropriate. *EIRs are required under CEQA when there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment. (CEQA Guidelines section 15064(a)(1).*" **Response**: Some but not all of the suggested language has been added to Chapter 2. The revised document does not include any advice to lead agencies as to which type of environmental document to prepare for different categories of projects because this determination should be made on a project-by-project basis by the lead agency. The *Guidelines* provide the tools to collect data that will assist with those determinations.
	"GOOD FAITH" AND "SAFE HARBOR" LANGUAGE
35	**Comment**: RES requested the following change on page 7, line 310 because they thought this language implied that developers who do not follow the *Guidelines* (even though they are voluntary), but do demonstrate good faith efforts, would still be at risk for prosecution. They suggest: *Wind energy developers should ~~who use the methods described in the Guidelines will secure information on impact assessment and mitigation that would apply to CEQA and to the other wildlife protection laws and will~~ demonstrate a good faith effort to develop and operate their projects in a fashion consistent with the intent of local, state, and federal laws.* **Response***:* We have not made the suggested revision because we do not agree that any statement in the *Guidelines*, including this sentence, implies that a developer risks prosecution by not using its recommended methods.
36	**Comment**: CESA noted that they support the *Guidelines* as a reasonable, flexible, and science based approach, but suggested adding language about Safe Harbor Agreements at line 315 at p.8 and at line 1135 at p.32: "*CDFG will offer to work with wind project proponents to develop voluntary cooperative agreements in which the Department agrees not to pursue liability against a wind-energy project due to any incidental takings of avian and bat resources for which it has authority under sections 3511, 4700, 5050, 5515, 3513, and 3800(a) of the Fish and Game Code, as a result of the development and operation of the project, provided such incidental takings are not malicious in their intent and the project proponent (owner and assigns) makes a good faith effort to avoid and minimize the potential adverse effects by way of implementing and complying with the Guidelines and the CEQA permit. These cooperative agreements will be conditioned further on the Department and the project proponent agreeing to work cooperatively in the future to avoid and minimize further impacts to avian and bat resources as new relevant information becomes available. Under such agreements, in the event that an incidental take occurs of a listed avian species during the operation of the facility, the project owner agrees to take all reasonable measures as deemed appropriate by the Department and the owner to further avoid, minimize*

	and/or mitigate such avian losses in the future. The agreements also will provide that either party may terminate this agreement after providing reasonable notice." **Response**: This detailed language has not been incorporated into the *Guidelines*. CDFG has indicated its willingness and commitment to work with project proponents in a cooperative manner to address project impacts which may be in conflict with strict liability "no take" laws. The specifics of potential "mitigation agreements" to address this issue must be developed on a site-specific basis.
37	**Comment**: CEERT recommended inserting the following language regarding safe harbor agreements at line 952, under the header: Purpose and Use of the *Guidelines*: *These Guidelines are intended to provide guidance, i.e. suggested activities, not impose rules. Although parties following the Guidelines should expect a safe harbor with regard to investigations needed under CEQA and good faith findings regarding intent to follow other wildlife protection laws, failure to follow the Guidelines does not necessarily imply a violation of CEQA or other requirements. An agency or court might find, for example, that some lesser investigation or action than suggested by these Guidelines is sufficient to satisfy CEQA under specific project facts. (See, e.g. Kerncrest Audubon Society vs. LA DWP, 2007 WL 2208806, Cal. App. 5 Dist., not officially published, but an example of where less than one full year of preconstruction monitoring was found, under the circumstances, to comply with CEQA.)* **Response**: Some of this suggested language has been included in a disclaimer at the beginning of the *Guidelines*. As discussed earlier in Comment #33, we do not consider the Kerncrest decision applicable to these voluntary *Guidelines*.
38	**Comment**: CEERT would like to have the *Guidelines* repeat or summarize the language about good faith efforts and enforcement actions in the discussion of federal laws (line 1256). **Response**: The *Guidelines* cannot make statements about how federal agencies enforce laws because the USFWS would need to have approved such language.
	EXCESSIVE RECOMMENDATIONS TO CONSULT WITH AGENCIES AND STAKEHOLDERS
39	**Comment**: CalWEA, RES, and others commented that the *Guidelines* elevated the authority of CDFG and USFWS in the CEQA process, requiring consultation with, or approval by, CDFG and USFWS on the study methods to be used at many points prior to and after issuance of a land use permit by the CEQA lead agency. CalWEA stated that by elevating the authority of the CDFG and USFWS in the CEQA process, the Draft *Guidelines* create backdoor authority during the CEQA permitting process for an agency that does not have such authority now. The *Guidelines* will undermine and dilute a local agency's constitutional land use authority over wind projects. RES commented that *Guidelines* will be accepted as "policy" by local CDFG offices and any level of work conducted outside the parameters suggested in the *Guidelines* will be

	considered inadequate –CalWEA noted that there were often differences of opinion among personnel in these agencies; and such differences might further complicate and delay the process. CalWEA, KWEA, enXco, and RES thought that the *Guidelines* would significantly raise permitting costs, and that extensive input and sign-off recommended with these understaffed agencies would introduce delays. The commenters expressed concern about the availability of CDFG staff, and noted that existing delays of several months would be exacerbated by additional review and approvals by CDFG suggested in this document. Clipper also expressed concerned about the level of engagement *Guidelines* imply for CDFG and USFWS, and provided details on the scarcity of staff and funding for CDFG. CalWEA provided a summary in their comment letter of the many recommendations for agency consultation that appear in the *Guidelines,* and recommended eliminating all that state or imply that deviating from the recommended protocols in the *Guidelines* requires the approval of wildlife agencies. Clipper suggested that rather than repeating this recommendation throughout, that statement should be condensed to one recommendation in the Executive Summary. Defenders of Wildlife commented that they strongly support CDFG having an active role in review of wind project siting applications and in development of the *Guidelines*, and do not agree with those who argue that CDFG's lack of resources is a reason to reduce their role or responsibility in reviewing applications of having input on projects. CDFG is a trustee agency with a public trust responsibility of protecting and conserving California biodiversity. **Response**: We do not agree that the *Guidelines* elevate or assign new authority to CDFG. The *Guidelines* clearly spell out the role of CDFG in relation to the permitting of a wind energy project, and explicitly state that: "*CDFG does not approve or disapprove a wind energy project as a trustee agency in the CEQA process but does have authority to regulate activities that implicate one of the statutes that CDFG administers*." We have retained the recommendations to consult with CDFG and other appropriate agencies at important scientific decision points during the permitting process. No statements in the *Guidelines* suggest that local CDFG offices treat the *Guidelines* as policy, and instead emphasize the voluntary nature of this document throughout. The *Guidelines* only recommend that applicants consult CDFG and USFWS as early as possible in the permitting process to avoid delays, and involve them as much as possible in decisions about pre-permitting and operations studies. Nowhere do the *Guidelines* state that studies and permitting efforts cannot proceed because CDFG or USFWS involvement or response is lacking.
40	**Comment**: RES suggested that on page 32, line 1144, the *Guidelines* add some language indicating that CDFG must also comply with CEQA in the issuance of these permits and other project approvals: "*including following CEQA timelines for comments and approvals*."

	Response: CDFG is aware that in fulfilling its CEQA duties they are required to consult on projects and respond to written requests for comments within the timeframes specified by CEQA.
41	**Comment**: Clipper suggested eliminating the recommendation for consultation with "*other appropriate stakeholders*" because organizations such as local environmental groups, which have legitimate concerns, have other opportunities to voice them during the public comment process. To imply further consultation is needed is a disservice to others who may wish to support or oppose a given project and further complicates and delays the CEQA process. **Response**: We agree that the CEQA scoping and public involvement process includes opportunities for public input and have included the recommendation to consult with appropriate stakeholders as a way to preempt potential conflicts. Early identification and resolution of controversial issues will reduce delays in the permitting process. Furthermore, local stakeholders may have information about biological resources in the region that could augment information from the preliminary site assessments and help in developing study plans for the pre-permitting surveys.
	CHAPTER 3 – PRE-PERMITTING
42	**Comment**: CEERT and CalWEA suggested replacing the word "*pre-permitting*" with "*pre-construction*" to enable project developers to complete studies after a conditional permit is issued but before construction begins, with permit modifications occurring as necessary prior to construction. **Response**: The term "*pre-permitting*" has been retained because we believe the *Guidelines* should not imply that is it routine and expected that lead agencies will make decisions about impacts and mitigation before they have all the information from the pre-permitting studies.
43	**Comment**: Clipper recommends that the reference to standard application of one-year data collection be deleted from the Executive Summary and suggests the following sentence be inserted instead: "*It is suggested that stakeholders compile an understanding of what is typically done in the region (or, for lack of information, a characteristically similar region) such that comparative data is generated for pre- and – post construction assessments. For those regions where impact concerns have been noted it may be appropriate to modify assessments to address these concerns to further scientific understandings.*" **Response**: The reference to "*one-year data collection*" is retained because that accurately sums up the *Guidelines*' recommendation for many projects.
44	**Comment**: Oak Creek Energy commented that the recommended bird use counts will require lengthy, expensive sampling but still will not result in statistically adequate

	samples, so that inferences will not be valid. On a wind farm 6 square miles in size, the resulting 6 data points, or even 10-15 points, will not obtain a statistically adequate sample, especially if so few points are stratified for both habitat types and time of day as suggested in the *Guidelines*. Inferences based on such inadequate statistical samples or small sample will not produce statistically useful data. **Response**: We agree that the additional sample points would be needed to achieve statistically meaningful sample sizes if the researcher was trying to answer questions about displacement or avoidance effects. For those situations the *Guidelines* recommends before-after/control-impact (BACI) or impact gradient study design, and provides suggestions on how to obtain sufficient independent observations to estimate detection functions. For most projects, however, the frequency and density of bird use counts recommended in the *Guidelines* are sufficient to provide adequate information about species composition, relative abundance, changes in seasonal abundance, and behavior of bird populations at a proposed project site.
45	**Comment**: Audubon noted that they support categorization of different project sites but wanted more specific guidance on Category 1 projects, clarification that similarity of habitat should include an assessment of a site's importance for migratory species, specifics on the length of time needed to fill in different kind of data gaps, and a reminder to include cumulative impact analysis for surrounding sites. Audubon did not support a CEQA categorical exemption for Category 1 sites. **Response**: Some language has been added to the discussion of Category 1 projects to address these comments.
46	**Comment**: FPL requested deletion of line 1344, page 39, which used size of a project as a criterion that could justify more than one year of pre-construction monitoring. Most wind projects in California meet this "*multiple groups of turbines over large geographical areas*" criterion, therefore using this standard would mean most projects would need more than one year of pre-permitting study. FPL requested deletion of line 1344, page 39, which used size of a project as a criterion that could justify more than one year of pre-permitting monitoring. **Response**: We agree that most projects involve "multiple groups of turbines" and have revised the *Guidelines* to indicate that it is multiple projects over large areas, such as development of a new and unstudied wind resource area, which might prompt multi-year studies.
47	**Comment**: FPL requested deletion of the term "*reference sites*" (page 39, line 1538). This term implies that all bird use counts require reference sites, but there was a consensus at workshops that it would be appropriate only for BACI studies where displacement is a concern. **Response**: We agree and have deleted "*reference sites.*"
48	**Comment**: EnXco commented that the categories of projects were an attempt to fix the problem of a "One Size Fits All" approach, but the framework for categorizing projects is too cumbersome and involves too many stakeholders. They comment that it is not practical to require consultation with the CEQA lead agency, USFWS, CDFG, and other

	appropriate stakeholders, and suggested instead, at line 1273: "*In deciding how to categorize a proposed project and when proposing to deviate from the standardized monitoring level, consult with the CEQA lead agency and the CEC*." **Response**: We have retained the original language and recommendations in this section because we believe that early consultation with USFWS, CDFG, biologists with specific expertise, and other appropriate stakeholders will ultimately reduce delays in project permitting by early identification of biological resource issues that may be of concern on a project.
49	**Comment**: RES suggested adding further delineation of the recommended level of study effort per category (page 41, line 1348). **Response**: This suggested revision has not been made because information about appropriate study efforts in each category is described earlier in the chapter.
50	**Comment**: FPL and Oak Creek Energy disagree with the recommendation for raptor nest searches out to three miles for certain wide-ranging raptors, and FPL recommends nest surveys out to one mile as sufficient to locate nests. They note that such surveys are expensive, and do not necessarily provide useful indicators of risk, which in any case would be revealed during pre-permitting bird use counts. **Response**: The raptor nest search recommendations have been revised so that expansion of nest searches beyond a one-mile radius would occur on a project-by-project basis if CDFG, USFWS, and raptor experts determine that a larger search area is warranted. The revised *Guidelines* do not specify what that larger radius might be.
51	**Comment**: Oak Creek Energy suggested deleting the recommendation to record bird use within the rotor-swept area because unless such data are stratified according to height of turbine, rotor diameter, topographic location, etc., comparisons of rotor-swept data will not provide meaningful comparisons, and in fact would mask differences in fatality. **Response**: We have retained this recommendation, which is essentially recording bird height, because this technique has been used successfully on many projects to help provide an estimate of collision risk (Morrison, 1998).
52	**Comment**: CalWEA commented that sampling frequency and density of bird use counts should be developed on a site-by-site basis. They further comment that bird use counts are excessive, scientifically defensible information may already exist that would obviate the need for them, and use and abundance can be more effectively characterized through more intensive sampling in relevant seasons. **Response**: We do not agree that the frequency and duration of pre-permitting bird use counts recommended in the *Guidelines* are excessive or that intensive sampling during particular seasons provides as complete a picture of seasonal changes in bird species composition and abundance as that provided by weekly bird use counts. The bird use count protocols recommended in the *Guidelines* have been used successfully on many projects throughout the United States. If scientifically defensible data are already available, the *Guidelines* provide opportunity for reducing the recommended pre-

	permitting studies by placing a project in Category 1.
53	**Comment**: Mr. Cimino commented that pre-permitting information should be made public so that they can understand from a layman's perspective what the mitigation plan consists of. **Response**: CEQA requires any information that provides a basis for decision making by a lead agency be made publicly available, including development of a mitigation plan.
	BATS
54	**Comment**: Horizon Energy comments that they and other stakeholders in the *Guidelines* development process have made great efforts to address the bat protocol in light of the unanswered questions on bat-related research and have even agreed in principal to a different approach, but the agencies have not accepted these comments to move toward a more regional study approach. Until there is agreement on this very complicated issue, Horizon suggests removing bats from the title and body of the *Guidelines* and continuing to work on a national/state level to contribute to knowledge and research on this issue. **Response**: We agree that regional research at the state level is needed on the issue of bats-wind turbine interactions, but site-specific information is also needed for specific projects so that lead agencies can assess potential impacts to bats. As they have from the beginning of this process, the *Guidelines* provide recommendations to collect project-specific data on bats and also encourage collaborative, regional bat research.
55	**Comment**: Defenders of Wildlife support the *Guidelines* recommendations for pre-and post-permitting requirements for addressing impacts to bats. Defenders would prefer greater than one year monitoring. It provides valuable site-specific information as well as contributing to a larger understanding of bats in California, as described in Ted Weller's August 15, 2007 letter. **Response**: While additional years of pre-permitting data would provide additional useful information, we believe that the recommendations in the revised *Guidelines*, which recommends up to one year pre-permitting acoustic monitoring, will provide needed project-specific information on bats and will also contribute to a greater understanding of bat-wind turbine interactions on a statewide scale.
56	**Comment**: Mr. Weller commented that data collection should be standardized such that data are comparable among facilities to understand the relationship between pre-construction activity levels and risk to bats; the *Guidelines* do a good job of providing guidance for such standardization. He also commented that local permitting agencies will require some level of site-specific pre- and post-permitting information on bats, which does not constitute research. In response to concerns expressed by wind industry representatives that the density of recommended acoustic monitoring stations

	would be difficult to achieve, he suggested putting acoustic monitoring stations on existing meteorological towers within the proposed wind resource area. He also suggested that the "ground level" detectors be elevated 1.5 meters above the ground to avoid interference with low-lying vegetation and that the elevated detectors be placed as high as possible on meteorological towers. **Response**: The revised *Guidelines* have incorporated the suggested changes in the recommended densities of acoustic detectors (that is, detectors at existing meteorological towers rather than one every square mile) and for placement of ground-level and elevated detectors on the towers.
57	**Comment**: Defenders of Wildlife noted that they support Weller's recommendations on changes to the distribution of acoustic monitoring stations. **Response**: The revised *Guidelines* have incorporated Mr. Weller's suggested changes.
58	**Comment**: PPM and CEERT provided similar alternative language to replace the recommendations for pre-permitting monitoring for bats. Their specific suggestions for inserted text included: a. *"Seasonal pre-permitting surveys for bats with acoustic monitors may be recommended and survey scopes should be developed in consultation with bat experts, CDFG, and USFWS. Surveys should at least cover the period that has been shown to have higher bat risk at projects surveyed in California as well as at wind projects in other parts of the country—that is, July through October." …."While July through October should be the focus of such studies, where it is feasible monitoring should occur for an entire year. Where certain habitat features conducive to general bat activity or resident bat activity are found in a project's vicinity, year-round acoustic monitoring may be explicitly recommended* b. *Because developers usually install several meteorological towers at each proposed project site in order to characterize wind at various parts of a project site, installing acoustic bat detectors on meteorological towers can also provide a range of locations that can characterize bat use of the site. Therefore it is recommended that developers install acoustic bat detectors near ground level and close to 30 meters when they install or service meteorological towers."* c. *Pre-construction acoustic monitoring for bats may not be recommended at repower sites or sites near existing projects where defensible fatality data can sufficiently define the risk of bat impacts at the proposed project or repower to be less than significant. Project proponents and lead agencies, in making this determination should consult with CDFG and USFWS and should take care to ensure that sites are comparable and should also consider implications of different turbine types being assessed and compared.* d. *While more extensive pre-and post-construction monitoring studies can help to assess species composition, species abundance, local population variability and temporal and spatial patterns of bat activity at facilities that encompass diverse landscapes, these studies would more appropriately be considered research (Kunz et al., 2007).* e. *Developers are urged to participate in research to develop better bat risk assessment methodologies funded by PIER and other organizations, by making*

	their project sites available, by sharing funding, and by releasing study results. **Response**: Many of these suggestions have been incorporated in the revised *Guidelines*, with some modifications. a. The revised language in the *Guidelines* recommends conducting a full year of monitoring, if feasible, because little is known about the timing of bat migratory activity in many parts of the state, and some bat species overwinter in California and can be active throughout the year. If year-round surveys are not feasible, we recommended that acoustic monitoring should include at least spring and fall migration, the periods that pose the greatest risk to bats. No date has been included in the recommendations for such monitoring because the peak bat migration months will vary considerably depending on the location in the state and because little is known as to the timing of bat migratory movements for any location. Bat experts will need to be consulted to make decisions about the appropriate timing of surveys. b. As described above in Comment #56, the recommendation for detectors on meteorological towers rather than at densities of one detector every one square mile has been accepted. c. As described above, the *Guidelines* indicate that if site-specific, defensible data about bats is already available for a repower sites, no acoustic monitoring is needed. The suggestions on assessing existing data for repowering projects are already in Chapter 3 and were not repeated in the section on recommended bat methods. d. The *Guidelines* already include a discussion of the need for additional bat research in Chapter 3. e. This recommendation to encourage developers to participate in research has been incorporated more or less as written.
59	**Comment**: Oak Creek Energy requested that the *Guidelines* eliminate any bat acoustical monitoring recommendations because there is no strong correlation between acoustic monitoring and turbine fatalities, and the wind industry should not be expected to fund the research. They point out that almost all bat fatality occurs in the fall during the migratory period, yet the *Guidelines* recommend year-round acoustic monitoring. More reliable and proven means of determining the presence of resident bat species include mist-netting, night vision binoculars, and night spotlighting. **Response**: According to members of the Scientific Advisory Committee, the lack of correlation between acoustic monitoring and bat fatalities at proposed wind turbine sites is due to the scarcity of studies on this topic and should not be interpreted as confirmation that such a relationship does not exist. Based on information from the bat experts we consulted, we believe that acoustic monitoring does have value in providing project-specific information on potential risk to bats at proposed wind turbine sites. As described above in Comment #58, the draft has been revised to accept some of the suggestions provided by CEERT and others. Other techniques, including mist-netting, night vision binoculars, and visual imaging, are described in Chapter 3 and can be used in pre-permitting studies if considered appropriate by bat experts advising the project developer.

61	**Comment**: FPL notes that they could support pre-construction risk assessment on a case-by-case basis by installing acoustic monitors on met towers where a lack of post-construction bat mortality data and presence of certain bat habitat indicators contribute to risk uncertainty. FPL is also open to supporting/funding collaborative, regional research efforts. **Response**: Revisions have been made to accommodate the suggestion that detectors be installed where meteorological towers occur rather than at densities of one every square mile. We have also revised this section to recommend that acoustic surveys are not warranted if defensible, site-specific data are available indicating that the project is unlikely to pose a risk to bats.
62	**Comment**: Oak Creek Energy suggests deleting lines 2040-2059, page 57 regarding exit counts and roost searches because bats forage for miles from their roosts, and they consider it unrealistic and unnecessary to perform searches in excess of basic field surveys. **Response**: The intent of this section was to provide a discussion of various bat survey techniques, not necessarily to suggest that roost searches and exit counts need to be done for every project. Such surveys might be warranted only if the bat roosts are sufficiently close to proposed wind turbines to pose a risk to the roosting bats. Revisions have been made to clarify that pre-permitting surveys should include an assessment of whether bat roosts could occur near the project site, not that every project needs to include those surveys or the other methods discussed in this section.
63	**Comment**: CEERT suggested the following language be inserted in line 1918 in the Bat Survey Methods section: "*The issue of bat presence and impacts is addressed under CEQA. CEQA does not require independent research, but rather the use of existing knowledge. CEQA also does not require mitigation or avoidance of impacts that are not significant. Because of the lack of correlation of acoustic monitoring and risk to bats, acoustic monitoring is not an investigation of the impacts of the project so much as basic research, and cannot be required under these Guidelines. The Guidelines may examine various methods to survey bats, but should not be prescriptive unless and until the research evolves to a point that it is predictive.* **Response:** Chapter 2 already provides adequate discussions of CEQA as it relates to the significance of impacts. As discussed in the response to earlier comments, we believe that pre-permitting acoustic monitoring for bats has value in providing project-specific information on potential risk to bats at proposed wind turbine sites and is not basic research. With respect to the *Guidelines* "requiring" investigation, nothing is required because the document is voluntary.
64	**Comment**: CEERT cited a passage from a recent article authored jointly by wind siting experts and bat experts (Kunz et al., 2007) that concluded that owners and developers should be required to provide full access to proposed and existing wind energy facilities and to fund research and monitoring studies by qualified researchers as part of the permitting process. CEERT notes that this recommendation is in line with what has been consistently proposed by the wind industry, encouraging pre-construction research and uniform post-construction fatality monitoring. CEERT states that the Kunz

	article does not recommend in any way project-specific acoustic monitoring, but rather discusses the research needs to determine the method's efficacy. **Response**: All parties are in agreement with the authors of this article that more research is needed to correlate pre-construction research and post-construction fatality data. However, the purpose of this article was to discuss questions, research needs, and hypotheses on the ecological impacts of wind energy development on bats, not to recommend site-specific protocols for each wind development project. The absence of recommendations for project-specific acoustic monitoring in the article cannot be interpreted to mean that bat experts think such monitoring would not provide useful information to assess potential impacts to bats.
65	**Comment**: CEERT comments that it is inappropriate at line 415 and elsewhere to state "*standardized recommended method is one year of acoustic monitoring.*" **Response**: The term "standardized" as used in the *Guidelines* refers to consistency in the recommended methods, not to a regulatory standard.
66	**Comment**: Sierra Club commented that they support current recommendations on bat monitoring but would also support a compromise position that would modify recommendations to accommodate concerns of wind industry as long as staff biologists were comfortable moving forward with it. **Response**: Revisions have been made on recommendations for bat monitoring that address the concerns of the wind industry while still including suggestions for collecting project-specific information on potential risk to bats.
67	**Comment**: CalWEA and FPL still generally support CEERT's suggestion in an earlier comment letter that proposed contributions to a research fund in lieu of site-specific pre-construction monitoring (that is, project developers would contribute $25,000 per 100 MW of installed capacity to a bat research fund to fill the information void about bats (with no payment if no possibility of significant bat impacts). EnXco noted that acoustic bat monitoring is not a mature technology and should not be required at every site, but they would support experimental research at a variety of sites, funded by multiple parties. **Response**: We are hopeful that the wind industry's commitment to research on this issue will result in a collaborative, public-private research partnership and that funding and resources will be allocated to this research effort. When that happens it may be possible to revise the *Guidelines* to enable those kinds of contributions from a lead agency. However, even if a research fund were already established with a mechanism in place that allowed lead agencies to create permit conditions that included contributions to the fund, a project-by-project assessment would still be needed to assess potential risk to bats.
68	**Comment**: CESA commented that it is premature for the *Guidelines* to recommend acoustic monitoring of bat activity for one year at all sites. Suggest instead: 1. Conduct pre-permitting site assessment and Phase I risk assessment for bats, including a habitat inventory, 2. Require post-construction monitoring for mortality, and 3. Authorize PIER to undertake research to address bat migratory movements in California, potential

	impacts of wind turbines, and best study protocols. **Response**: 1. Pre-permitting bat monitoring recommendations have been modified as described in earlier comments. Habitat inventories could not substitute for acoustic monitoring because little is known about correlating habitats with presence of bats during migration. 2. The document currently recommends carcass counts for bats and birds for two years, as suggested by CESA. 3. The Energy Commission has already allocated one million dollars to PIER to conduct research that will help inform the siting of new wind energy projects; improve methods to assess impacts of wind development on birds and bats; and evaluate the effectiveness of impact avoidance, minimization, or mitigation measures. Some research is likely to specifically address issues related to bat-wind turbine interactions.
69	**Comment**: Oak Creek Energy recommended making some determination of potential presence of bat species of concern before implementing intensive acoustic monitoring and stated the intensive surveys recommended in the *Guidelines* are research rather than baseline data. If a project is in an area not known to be potential habitat, such surveys should not be required, as no basis exists for doing intensive sampling for something that may not even occur at a location. **Response**: Acoustic sampling does not constitute intensive sampling but rather is the recommended method for determining bat species composition in an area and assessing whether or not special-status bat species might be present. There are no habitat variables that provide reliable indicators of the presence of bat species, particularly for species that occur in an area only during migration. Site-specific baseline information must be obtained to inform the CEQA decision makers regarding the potential for special-status species and to estimate project impacts.
	CHAPTER 4 - IMPACTS AND MITIGATION
70	**Comment**: Oak Creek Energy page 58, lines 2067-2068. This section fails to address the fact that under CEQA only significant impacts need to be mitigated. Measures incorporated for avoidance and environmental protection are not, under CEQA or NEPA, considered mitigation – they are part of project development. Such measures may require avoidance and minimization measures, but if they reduce impacts to less than significant, they are not "tallied" in the mitigation and monitoring and reporting plans required by CEQA. **Response**: The purpose of the *Guidelines* is to recommend monitoring methods that will help to avoid and minimize impacts to birds and bats, not just impacts deemed significant under CEQA. Project development features that incorporate avoidance and minimization measures are considered mitigation under CEQA.
71	**Comment**: FPL requests that at line 2437 instead of stating that *"the purchased land or easements should have high biological value for the targeted species*" it be changed to read: "*The purchased land or easements should have a biological value equal to or*

	higher for the targeted species . . ." **Response**: This suggested revision has been made.
72	**Comment**: Audubon suggested an expansion of the definition of "risk zone" to include transmission lines, other wires, and other facilities that may have direct impacts on birds and bats. **Response**: We have not changed the definition of the term "risk zone" because it has particular meaning to wind-wildlife researchers that require it to be specific to the rotor-swept area. However, the potential risk of other features of wind energy facilities (guy wires, transmission lines) is acknowledged elsewhere in the *Guidelines*, and recommendations are made in the mitigation section to avoid impacts from these project features.
73	**Comment**: Oak Creek Energy points out that not all compensatory mitigation options need to be off site. Predator control and invasive species removal are examples of compensation that would be effective on site (page 14, line 552). **Response**: We do not recommend on-site habitat enhancement because it might attract more species to the wind resource area, where they may be at risk of collision.
74	**Comment**: Oak Creek Energy comments that it is not clear on page 13, lines 524-592, as to what triggers compensation. Compensation is required by state law for loss of endangered species habitat and may be used to mitigate significant impacts under CEQA, but the Migratory Bird Treaty Act does not require compensation. Wind energy developers need to know early what mitigation and compensation requirements are. Uncertainty about compensation and the potential for seasonal shutdowns and open-ended monitoring make financing of wind energy projects in California more difficult. **Response**: The section referenced by Oak Creek Energy (page 13, lines 524-592) is part of the *Guidelines'* step-by step overview and therefore by design does not present detailed information or discussions. Chapter 4 of the *Guidelines* discusses that habitat compensation is a mitigation measure that can be required to reduce CEQA impacts to a level that is less than significant. Chapter 2 indicates that compensation may also be required as part mitigation in a California Endangered Species Act permit obtained for a project that "takes" a listed species and that compensation is an option to offset impacts to bird species protected by other California wildlife laws. The document mentions throughout that mitigation measures (including required compensations) need to be identified within the CEQA analysis and put into the project permit to ensure certainty and allow project developers to make reasonable cost estimates to secure financing. In instances where the wind developer chooses to develop a site even though the CEQA analysis indicates significant and high impacts would occur, then seasonal shutdowns may be an option to reduce impacts, and long-term operational monitoring may be required to ensure impacts are adequately mitigated.
75	**Comment**: CESA thought the *Guidelines* should not establish compensation requirements prior to issuing final permits because applicants cannot predict operational fatality. CESA suggested the following language in place of lines 527-537 at page 13 and lines 2408-2410 at page 66 "*Compensation generally should not be*

	established during the pre-project stage for the potential operational effects of a wind project on avian and bat species mortality. Instead, compensation requirements should be based on the results of operations monitoring to determine if compensation is warranted. If monitoring establishes that a project is causing significant mortality effects and reasonable operational changes have proven unsuccessful at reducing mortality to a non-significant level, lead agencies should work cooperatively with the project owner to establish reasonable compensation commitments. Development of effective compensation measures should involve the CEQA lead agency, project owner, wildlife agencies, and affected public stakeholders." RES also noted that the *Guidelines* contain recommendations for compensatory mitigation that are based on estimated impacts instead of measurable impacts. Mitigation should be built into permit conditions but should be done in a way that links compensation with actual impacts. **Response**: The document has been revised to clarify that a project's operational fatalities cannot be forecast with precision; therefore, lead agencies may be unable to make some compensation decisions until fatality data have been collected. The *Guidelines* recommend, however, that the general terms and funding commitments for future compensatory mitigation and the triggers or thresholds for implementing such compensation should be established prior to issuing final permits. A clear-cut delineation of potential compensation requirements must be made prior to permit approval to provide certainty for the wind energy developer of the range of potential costs and certainty for resource agencies that impacts to wildlife will be mitigated.
76	**Comment**: CEERT commented that in discussing indirect impacts such as increased number of ground squirrels attracting raptors around turbines, delete existing text and insert: What may appear to be an indirect impact in theory may not necessarily turn out to be one in fact. CEQA Guidelines section 15145 specifically prohibits speculation as to impacts. For example, Smallwood and Thelander (2004 and 2005) concluded that fossorial mammals such as ground squirrels burrowed under rock piles left from the construction of turbine pads in the Altamont Pass Wind Resource Area and concluded that raptors might then be attracted close to the turbines. However, preliminary results from two years of monitoring indicate that the impact of the rock piles is insignificant. Although the report is not yet final, it indicates that caution must be exercised to avoid speculative findings under CEQA (Altamont Draft Results, 2007). Oak Creek Energy wanted clarification on page 60, line 2144-2150, that presence of high number of ground squirrels at Altamont has more to do with land use (heavy grazing) than with presence of turbines. They commented that it should be noted in this section that soils, geology, and land uses are also important issues relative to site planning and management to be considered. **Response**: The section on indirect impacts has been revised and has incorporated some of the suggested wording from Oak Creek Energy to reflect the fact that development and operations activities and other factors such as grazing can attract prey species (insects, small mammals) that may in turn attract raptors, insectivorous

	birds, and bats to wind turbine sites.
77	**Comment**: CEERT requested that the following sentence be inserted at line 2296: "*Preliminary results from two years of monitoring in the Altamont Pass Wind Resource Area indicates that small turbines (<250 kW) are riskier than larger turbines (Altamont Draft Results, 2007)*." **Response**: We have not cited this report or incorporated the suggested language because the study is still in progress and the results are not final.
78	**Comment**: CalWEA comments that the adaptive management concept is in its infancy for wind projects, there are no guidelines or accepted methods for such an approach, and it is open-ended. Adaptive management should be discouraged at this time. CalWEA generally supports the specific language put forward by CEERT in its May 14, 2007 comments as a substitute for the adaptive management language in the April draft (which remains largely unchanged). **Response**: Adaptive management has been used since the 1970s as an effective tool for making wildlife management decisions in uncertain circumstances. We agree it is rarely used for wind energy projects, mainly because it is used only in relatively rare situations in which the level of fatalities at a project site is unanticipated and very high. In such unusual circumstances, adaptive management provides an accepted framework for making decisions about how to mitigate high levels of unanticipated fatalities. We have not revised the discussion of adaptive management because we believe it provides the best approach for those rare situations in which fatalities are unexpectedly high.
79	**Comment**: RES requests deletion of the sentence on page 15, line 602: "*In extreme cases, the compensation specified in the permit may not be adequate for high levels of unanticipated impacts, and project operators may need to consider operational and facility changes.*" Suggesting untested mitigation measures such as shut-downs or removal of turbines in "extreme cases" (which are undefined at this point) will have impacts on project financing. **Response**: "Extreme cases" has been left undefined because the decision as to what constitutes "extreme" must be left to the discretion of the permitting agency. The *Guidelines* have retained this term because it accurately conveys the idea that only very rare circumstances would result in such measures. Application of the recommended pre-permitting study methods in the *Guidelines* will help avoid such rare circumstances.
80	**Comment**: Oak Creek Energy comments on the discussion of guy wires on page 13, line 512-523, and page 66, line 2370-2373. They note that it is not always possible to avoid the use of guy wires, especially on met towers, and usage of guy wires is standard in the wind industry. **Response**: The recommendation to avoid guy wires has not been changed because guy wires can be a substantial source of bird fatalities and should be avoided. Johnson et al. (2000) recorded 16 bird fatalities (primarily passerines) attributable to collisions with the five-guyed meteorological towers at the Foote Creek Rim Wind Resource Area

	in Wyoming, a fatality rate higher than that which occurred at the wind turbines on this site.
	CHAPTER 5 – OPERATIONS MONITORING
81	**Comment**: CEERT, CalWEA, FPL, Oak Creek Energy, and others disagree with the general approach of use monitoring on all projects in conjunction with fatality monitoring because they believe it adds considerable cost to operations studies without adding much information. These commenters believe that only fatality monitoring should be recommended post-construction and that bird use surveys should be conducted only if fatalities are higher than anticipated. **Response**: The revised *Guidelines* now recommend one year of bird use monitoring for Category 2 and 3 projects, and we have added some language that will allow more flexibility in conducting the bird use counts: "*For Category 2 and 3 projects conduct one year of bird use counts during project operation to characterize bird species composition and abundance, behavior, and seasonal presence. This information provides a context for interpreting fatality data, insight as to turbine specific fatality patterns, and a better understanding of the effects of the turbines on bird behavior and distribution within the project area. The bird use count methods should be consistent with those used during the pre-permitting studies, but can be tailored to specifically address issues that may have arisen during those studies. For example, instead of conducting weekly counts throughout the year for all birds at all turbine sites, the bird use counts may need to concentrate survey efforts during a particular season, on certain species, or at specific problem locations within the project area. Depending on the results of the first year of operation carcass searches additional bird use counts may be needed in the second year. Consult with experts and appropriate agencies, including CDFG and USFWS, in adapting the bird use counts needed during operations and in deciding whether a second year of bird use data collection is warranted...*"
82	**Comment**: FPL notes that acoustic monitoring for bats during operations is still in the *Guidelines* despite statements at the August 13th hearing that they had been revised. The document now states that such monitoring should occur only if agencies believe it is warranted, but CDFG has already indicated that it believes such monitoring <u>is</u> a necessity, so wind industry has to assume so and plan costs accordingly. Oak Creek Energy requested that the revised draft delete recommendations for bat acoustic monitoring for two years, *"if CDFG, USFWS, and other knowledgeable scientists and appropriate stakeholders consider this information a necessary adjunct to bat fatality data*." Carcass searches will reveal bat mortalities during operation. **Response**: We have clarified that acoustic monitoring for bats during operations is recommended only if this information is necessary based on specific information, as follows: "*Acoustic monitoring for bats during operations is not recommended unless data from pre-permitting surveys or fatality monitoring indicate information about bat*

	activity is a necessary adjunct to the bat fatality data. Consult with bat experts and appropriate agencies to determine if acoustic monitoring studies are warranted during operations." This revised language clarifies that agencies will need to provide some substantiation for any requests to conduct operations acoustic monitoring for bats.
83	**Comment**: CalWEA commented that the *Guidelines* should state that the purpose of operational monitoring is to confirm predicted levels of mortality and, if necessary, to explain higher than predicted levels of mortality. Any studies beyond this purpose should be publicly funded. **Response**: The document clearly states the purpose of monitoring at the beginning of Chapter 5: "*At a minimum, the primary objectives for operations monitoring are to determine: ·* • *Whether estimated fatality rates described in pre-permitting assessment were reasonably accurate·* • *Whether the avoidance, minimization, and mitigation measures implemented for the project were adequate or whether additional corrective action or compensatory mitigation is warranted. ·* • *Whether overall bird and bat fatality rates are low, moderate, or high relative to other projects.*" These are all project-specific questions for which public funding would be inappropriate.
84	**Comment**: Oak Creek Energy pointed out that on pages 74 and 79 the *Guidelines* should note that a biologist needs a MBTA permit to collect, hold, and use bird carcasses and that MBTA permits require specific data reporting. **Response**: The "Collecting Carcass Data" section already includes the statement: "*State and federal collecting permits are required to salvage dead birds or bats*," but we have added some of the suggested language to indicate that data reporting requirements are part of the permit conditions.
85	**Comment**: Oak Creek Energy requested that deletion of "*Consider any injured birds or bats encountered during the search as fatalities*" (page 75, line 2717-2718) because not all injuries to birds in bats in the vicinity of wind turbines will be directly related to the wind turbines themselves, and not all injuries to birds and bats will necessarily result in a fatality. **Response**: The sentence has not been deleted, but to clarify the meaning the following language has been added to the sentence: "….*unless the injured animal has been successfully rehabilitated and released to the wild*." Assuming that an injured bird will become a fatality does not imply that the fatality would be ascribed to a wind turbine collision. The preceding sentence in that paragraph clarifies that researchers should not assume all fatalities are the result of turbine strikes.
86	**Comment**: Oak Creek Energy disagreed with the suggestion to avoid old or long-frozen specimens (page 78, line 2859-2861). Oak Creek has not found that scavengers treated long-frozen meat any differently. In the case of large-scale carcass removal trials, it is difficult to find enough specimens to conduct studies without using specimens frozen for more than 6 months. Therefore, use different language than "Avoid their use if possible" and do not place an arbitrary limit of 6 months on frozen specimens.

	Response: We agree, and have removed the recommendation to avoid use of long-frozen specimens.
87	**Comment**: Oak Creek Energy suggested a statement be added to pages 78 and 79, lines 2863-2871, that if carcasses are remaining long enough to decay past the point of attracting scavengers, then this may be an indicator that scavenging is low in that area. Therefore, it should be noted that in establishing criteria for removing carcasses, carcasses should not be removed so early that the results of the overall study become biased. **Response**: We agree and have made revisions to indicate that carcass decay is part of a normal process, and a situation in which the carcasses remain untouched a long time and become unattractive to scavengers may reflect a low scavenging rate. We have added a recommendation here to avoid using already decayed carcasses for carcass removal studies because that could bias scavenging trial results.
88	**Comment**: Oak Creek Energy requested clarification that the CDFG's Biogeographic Information and Observation System (BIOS) program is the best place to submit bird and bat raw data. The BIOS program website listed in the *Guidelines* (www.bios.ca.gov) does not appear to be working currently. **Response**: We have added some language to address this comment and have corrected the Web link.
89	**Comment**: Mr. Weller noted that a central database is needed to collect the pre-permitting and operations monitoring data. **Response**: The *Guidelines* provide instructions on how to contribute monitoring data to CDFG's BIOS to create such a central database.
90	**Comment**: Oak Creek Energy requested deletion of the recommendation to record bird and bat fatalities per MW of installed capacity per year and per rotor-swept square meter per year (page 18, lines 708-714). Delete requirement to record bird and bat fatalities per MW of installed capacity per year and per rotor-swept square meter per year. The number of variables (height, diameter, location of rotors, height of tower, etc) can make such comparisons meaningless. Utility required shut downs, breakdowns, repair, and maintenance affect the number of turbines operating any single day, and use of data by MW could mask which turbines might be causing the most mortality. **Response**: We have not changed the metric recommendation because common metrics are essential to make comparisons between projects and between years at the same project. A metric of fatalities per turbine was often used in earlier wind-wildlife studies, but these comparisons were of little value because of vastly different sizes of the turbines. While no metric will include all variables, fatalities per MW (of installed capacity) and fatalities per rotor-swept square meter are now the most commonly used metric among wind-wildlife researchers and are useful, easy-to-calculate measures. Using MW hours would improve this metric because it adds production and operation time variables into the equation, but that type of information is often unavailable from operators.

91	**Comment**: Oak Creek Energy comments that nothing in the *Guidelines* acknowledges the processes and study methods specific to local environmental conditions that have already been put in place by lead agencies. Bird use counts during operations are not necessarily needed for two years. Other regional and adjacent mortality data may be available that could eliminate the need for post-construction monitoring, especially for expansions and repowers of existing projects. Delete requirement that Category 2 and 3 projects need the full two years of operations monitoring because post-construction BUCs will not be able to prove that the wind project has directly caused any changes to bird populations in the area. **Response**: As described in Comment #8, we have added some language to the *Guidelines* to encourage local governments to tailor recommendations in the document to their local area based on biological information and research unique to their region. Revisions have also been made with respect to recommendations for repowering and for operations bird use counts.
92	**Comment**: CEERT suggests the following language be inserted after the first paragraph of Chapter 5: "*Requirements for post construction monitoring will vary depending upon the legal framework involved. CEQA requires monitoring of mitigation measures, not a continuing monitoring of all impacts unless that monitoring is required pursuant to a mitigation measure. Wildlife agencies may look to post construction monitoring as a measure of good faith intent to comply with various "no take" bird protection laws. Post construction monitoring for bats will generally be subject only to CEQA requirements.*" **Response**: The recommended language has not been inserted into Chapter 5 because Chapter 2 already provides an adequate discussion of CEQA and other wildlife laws in relation to recommendations in the *Guidelines*.
93	**Comments**: FPL suggests removing the provision for post-construction fatality monitoring every five years for the life of the project if agencies and other stakeholders deem fatality levels to be "high" (line 2613). The term "high" is not defined, so the trigger for such long-term monitoring is not clear, nor do the *Guidelines* provide an adequate justification for such monitoring. If impacts are higher than expected, the adaptive management provisions in the *Guidelines* recommend additional compensation or other potential mitigation measures. Long-term monitoring serves more to establish how bird use/migration behavior might shift over time as a result of global warming rather than helping to mitigate site-specific impacts. **Response**: The term "high" has been deleted as requested. The long-term monitoring described in this section would serve only as a means to gather information to develop impact avoidance, minimization, and mitigation measures and to verify whether these measures were effective in reducing fatalities.
94	**Comment**: Mr. Cimino commented that the *Guidelines* should include post-construction monitoring to determine how pre-permitting decisions have turned out, and carcass searches need to be increased to weekly rather than 12 times yearly. **Response**: The *Guidelines* recommends two years of carcass searches at two-week

	intervals, with flexibility to increase frequency of searches if warranted. For example, if pilot scavenging trials reveal high levels of carcass removal, the document recommends increasing the frequency of searches. However, weekly searches at every site are not necessarily appropriate and could result in considerable expenditure of effort without any improvement in information about operations fatalities.
95	**Comment**: Oak Creek Energy comments that no time frame for carcass searches should be given in *Guidelines*; it should instead be adjusted based on local conditions. For example, Anderson's studies in Tehachapi found 50 percent of carcasses removed in three days, so using the two-week standard would have meant not finding carcasses. Oak Creek is therefore conducting carcass searches more frequently to adjust to environmental conditions. **Response**: As described above, flexibility is built into the recommendations on carcass search intervals so that adjustments can be made as appropriate to accommodate site-specific conditions.
	APPENDICES
96	**Comment**: Santa Barbara County comments that data in Appendix G do not warrant the statistical inference that raptor mortality are correlated with raptor use. Behavioral differences are known to be an important explanatory variable for risk of collision with turbines, an issue that is mentioned but not discussed adequately in the analysis of raptor mortality in Appendix G. Juxtaposition of Figures 1 and 2 in Appendix G suggests visually that they are comparable, but the order of project locations along the X axis is different in the two figures, giving the false impression that raptor use and fatalities follow the same trend. "Cautions" statement does not go far enough in disclosing how weak the basis is for predicting mortality based on bird use. The current state of science does not support prediction of songbird mortality, nor does it appear to offer a statistically sound predictor for raptor mortality. **Response**: We agree that the researcher may not have fully accounted for the imprecision of the estimates when the regression was done and agree that any regression analysis should be interpreted with caution because other important hidden or unmeasured variables might be responsible for the apparent relationship. However, based on our review of the studies and advice from statisticians we believe this analysis generally supports the conclusion that a correlation exists between high raptor use and high raptor fatalities. We have revised the language and added some additional cautionary statements to address the concerns raised by this comment.

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Appendix A

Milestones and History of Public Involvement for the *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*

Date	Location	Milestone
May 24, 2006	Sacramento	The Energy Commission **adopted an Order Instituting Informational proceeding** that assigned the task to the Energy Commission's Renewables Committee. To assist Energy Commission and California Department of Fish and Game (CDFG) staff in this endeavor, the Renewables Committee established a science advisory committee and solicited suggestions from stakeholders on how to incorporate public input into the *Guidelines* development process.
June 9, 2006	Sacramento	**Renewables Committee Workshop:** Receive comments from the public on the *Guidelines* development process and on proposed draft outline of topics to be covered in the *Guidelines* (Transcript available*).
July 28, 2006	Sacramento	**Staff Workshop:** Presentations by the Energy Commission, CDFG, U.S. Fish and Wildlife Service (USFWS) to discuss relationship of *Guidelines* to CEQA, state, and federal laws. Facilitated discussion on: how to determine pre-construction study needs; conduct post construction monitoring and management; and mitigation options (Meeting summary and presentations available).
August 28-29, 2006	Sacramento	**Staff Workshop.** Presentations by the Energy Commission, Public Interest Energy Research Program, USFWS, CDFG, PPM, FPL, and facilitated discussion on: pre-construction and operations monitoring, including duration, intensity, study methods of surveys; sensitivity of site; nocturnal migratory bird studies; and bat/wind turbine interactions (Meeting summary and presentations available).

Date	Location	Milestone
September 27-28, 2006	Bakersfield	**Staff Workshop.** Presentations by the Energy Commission, CDFG, CalWEA, NREL. Facilitated discussion of: impacts and mitigation in the context of CEQA and state wildlife laws' impact assessment; process for *Guidelines* revisions; avoidance and minimization measures; and compensatory mitigation. (Meeting summary and presentations available).
November 2, 2005	Sacramento	**PIER Workshop.** Presentations by PIER and discussion about scoping a research agenda for assessing bird and bat impacts from wind development (Meeting summary and presentations available).
Dec 22, 2006		**Release of Draft Staff Report** *Statewide Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*
January 17-18 2007	Riverside	**Staff Workshop.** Facilitated discussion of draft *Guidelines* (Meeting summary and presentations available).
February 5, 2007	Livermore	**Renewables Committee Workshop**. Public comment on Draft Staff Report: *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*, April 2007 (Transcript available).
April 5, 2007		**Release of revised Draft Staff Report** *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*
April 16, 2007	Sacramento	**Renewables Committee Workshop.** Public comment on revised staff draft *Guidelines* (Transcript available)
July 17, 2007		**Release of Renewables Committee Draft Report** *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development*
August 13, 2007	Sacramento	**Renewables Committee Workshop.** Public comment on revised Committee Draft *Guidelines* (Transcript available)

*****The draft *Guidelines*, meeting summaries, transcripts, presentations, and comment letters can be accessed at: <www.energy.ca.gov/renewables/06-OII-1/documents/index.html#meetings>.

Participants in the Development of

California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development

Wind Energy Developers and Associations

- AES SeaWest, Inc.
- Cabazon Wind Energy, LLC
- California Wind Energy Association
- Clipper Windpower Development Co.
- Desert Wind Energy Association
- EnXco, Inc.
- FPL Energy
- GE Energy
- Horizon Wind Energy
- Invenergy Wind North America, LLC
- Kern Wind Energy Association
- Oak Creek Energy Systems, Inc.
- PPM Energy
- RES America Developments, Inc.
- San Gorgonio Farms, Inc.
- TRC Essex
- UPC Wind Management, LLC
- Whitewater Energy Corporation
- Wintec Energy, Ltd.

Utilities

- Los Angeles Department of Water and Power
- Pacific Gas and Electric
- Sacramento Municipal Utility District
- Southern California Edison

Federal Agencies

- U.S. Fish and Wildlife Service

Non-Governmental Organizations

- Center for Energy Efficiency and Renewable Technologies
- Clean Energy States Alliance

Environmental Groups

- Audubon California
- Golden Gate Audubon Society
- Defenders of Wildlife
- Los Angeles Audubon Society
- Santa Barbara Audubon Society
- Santa Clara Valley Audubon Society
- Residents of San Gorgonio Pass Area
- Sierra Club California
- Sierra Club, Kern-Kaweah Chapter
- Save Our Sound

Counties

- Kern County Planning Department
- Marin County Community Development Agency
- Riverside County
- Santa Barbara County

Elected Officials

- Marion Ashley, County of Riverside Board of Supervisors
- Senator Jim Battin, 37th Senate District
- Don Maben, Kern County Board of Supervisors

Consulting & Law Firms

- Anemos Consulting
- Bloom Biological, Inc.
- EDM International, Inc.
- High Tech Corp.
- Morrison and Foerster, LLP
- Nielsen, Merksamer, Parrinello, Mueller, and Naylor
- Pandion Systems, Inc.
- Paul, Hastings, Janofsky, and Walker, LLP
- Western EcoSystems Technology, Inc.
- M.H. Wolfe and Associates
- URS Corporation

Universities/Research Centers

- Bat Conservation International
- Humboldt State University
- North Carolina State University
- National Renewable Energy Laboratory
- Santa Cruz Predatory Bird Research Group
- University of California, Berkeley
- University of Nevada, Reno

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